

REMARKS

Applicant requests reconsideration of the application in view of the amendments and arguments addressing the new grounds of rejection.

Summary of Office Action

Claims 1-20 are pending.

Claims 1, 4, 13, and 15 were rejected as being anticipated under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,219,417 of Zhou ("Zhou").

Claims 3 and 14 were rejected under 35 U.S.C. § 103 as being unpatentable over Zhou. In view of AM79213/ AM79C203/031 Advanced Subscriber Line Interface Circuit (ASLIC) Device Advanced Subscriber-Line Audio Processing Circuit (ASLAC) Device Preliminary Datasheet, Publication #19770, Rev. B, September 1998, p. 13 ("AM79213")

Claims 5 and 16 were rejected under 35 U.S.C. § 103 as being unpatentable over Zhou in view of U.S. Patent No. 5,528,682 of Cotreay ("Cotreay").

Claims 7, 10, 11 and 18 were rejected under 35 U.S.C. § 103 as being unpatentable over Zhou in view of U.S. Patent No. 5,274,702 of Rosch, et al. ("Rosch").

Claims 2, 6, 8, 9, 12, 17, 19, and 20 were indicated as being allowable if re-written.

Summary of Amendments

Claims 1, 4, 10, and 13 were amended. Applicant submits that the amendments to the claims do not add new matter.

Reference to Applicant-Initiated Examiner Interview

A brief conference was initiated by the undersigned and conducted with the Examiner on March 9, 2006 based on the rejections set forth in the February

9, 2006 Final Office Action. The undersigned understood that the Examiner did not believe the introduction of the term “analog” rendered the independent claims patentable. The undersigned understood that the Examiner agreed that neither Zhou’s quad SLIC nor Zhou’s DSP receives either a subscriber line tip voltage or ring voltage nor does Zhou’s quad SLIC or DSP determine a tip or ring voltage from the provided parametric information.

Although the applicant does not agree with the Examiner’s arguments or interpretation of the cited references with respect to certain rejections, the undersigned has amended each independent claim (1, 4, and 13) to remove the “analog” limitation and to incorporate language that the undersigned believes is consistent with the telephonic discussions regarding the tip and ring voltages. The undersigned believes that this renders the disagreements moot.

Response to 35 U.S.C. § 102 rejections

Claims 1, 4, 13, and 15 were rejected under 35 U.S.C. § 102 as being anticipated by Zhou.

As indicated above, claims 1, 4, and 13 have been amended. Applicant respectfully submits that claims 1, 4, and 13 as amended are not anticipated by Zhou. In particular, applicant submits that *Zhou does not disclose an integrated circuit having at least one node for receiving a sensed tip signal and at least one node for receiving a sensed ring signal of a subscriber loop, wherein the integrated circuit determines a tip voltage and a ring voltage from the sensed tip and ring signals, wherein the integrated circuit generates a control signal for a subscriber loop linefeed driver in response to the sensed tip and ring signals.*

The Examiner has analogized Zhou’s quad converter to the claimed integrated circuit (02/09/2006 Office Action, p. 2). Applicant submits that Zhou’s quad converter serves as a two-way communication link between a DSP and the analog SLICs. The SLICs provide analog data signals that are digitized by the quad converters and communicated to the DSP. The DSP provides digital control

and information data signals to the quad converter which converts the signals to analog form to present them to the SLICs. (Zhou, col. 6, lines 11-32).

Zhou's quad converter: 1) does not generate control signals in response to the sensed tip and ring signals; and 2) does not determine either a tip voltage or a ring voltage from the sensed tip and ring signals.

With respect to the first point, Zhou's DSP is the component that generates control signals in response to the sensed tip and ring signals (Zhou, col. 6, lines 13-17). Zhou's quad converter merely provides the bi-directional analog/digital conversion to permit communication between the SLIC and DSP. There is no support for the Examiner's proposition that the quad converter is generating control signals in response to the sensed tip and ring signals. The quad converter merely performs the digital-to-analog conversion on the control signal provided by the DSP.

With respect to the second point, Zhou's quad converter receives parametric information provided by the SLICs. The parametric information includes DC line voltage V_{ab_DC} and AC line signal voltage V_{ab_AC} across conductors A and B. The parametric information may also include line current data (I_a and I_b). (Zhou, col. 5, lines 55-65; col. 6, line 59 – col. 7, line 30). Applicant submits, however, that the parametric information does not include tip voltage or ring voltage. Moreover, Zhou does not teach or disclose determination of such information from the parametric information provided to the quad converter or DSP.

Accordingly, *Zhou does not disclose an integrated circuit having at least one node for receiving a sensed tip signal and at least one node for receiving a sensed ring signal of a subscriber loop, wherein the integrated circuit determines a tip voltage and a ring voltage from the sensed tip and ring signals, wherein the integrated circuit generates a control signal for a subscriber loop linefeed driver in response to the sensed tip and ring signals.*

In contrast, claim 1 includes the language:

1. An integrated circuit package apparatus comprising:
an integrated circuit having at least one node for receiving a sensed tip signal and at least one node for receiving a sensed ring signal of a subscriber loop, wherein the integrated circuit determines a tip voltage, a ring voltage, a tip current and a ring current from the sensed tip and ring signals, wherein the integrated circuit generates a control signal for a subscriber loop linefeed driver in response to the sensed tip and ring signals, wherein the linefeed driver does not reside within a same integrated circuit.

(Claim 1, as amended)(*emphasis added*)

Similar arguments may be made with respect to claims 4 and 13:

4. A subscriber loop linefeed driver comprising:
sense circuitry providing a sensed tip signal to a first node set of an integrated circuit and a sensed ring signal to a second node set of an integrated circuit, wherein the integrated circuit determines a tip voltage, a ring voltage, a tip current, and a ring current from the sensed tip and ring signals, wherein each of the first and second node sets includes at least one node distinct from the other set; and
power circuitry for providing battery feed to a ring node and a tip node of the subscriber loop in accordance with a control signal generated by the integrated circuit in response to the sensed tip and ring signals.

(Claim 4, as amended)(*emphasis added*)

13. An apparatus comprising:
an integrated circuit generating subscriber loop control signals in response to a sensed tip signal and a sensed ring signal of the subscriber loop, the sensed tip and sensed ring signals received at first and second node sets, respectively, of the integrated circuit, wherein each of the first and second node sets includes at least one node distinct from the other set, wherein the integrated circuit determines a tip voltage, a ring voltage, a tip current, and a ring current from the sensed tip and ring signals; and
a linefeed driver for driving a subscriber loop in accordance with the subscriber loop control signals, the linefeed driver providing the sensed tip and ring signals.

(Claim 13, as amended)(*emphasis added*)

Applicant thus submits claims 1, 4, and 13 as amended are not anticipated by Zhou. Given that claims 2-3 depend from claim 1, claims 5-12 depend from claim 4, and claims 14-20 depend from claim 13, applicant submits claims 2-3, 5-12, and 14-23 are likewise not anticipated by Zhou.

Applicant respectfully submits that the 35 U.S.C. § 102 rejections have been overcome.

Response to 35 U.S.C. § 103 rejection of claims 3 and 14

Claims 3 and 14 were rejected as being unpatentable over Zhou in conjunction with the Examiner's "Official Notice".

Applicant submits that claim 3 depends from claim 1 and claim 14 depends from claim 13. If independent claims 1 and 13 are nonobvious in view of the cited references, then claims 3 and 14 are likewise nonobvious in view of the cited references.

Applicant respectfully submits that the rejection of claims 3 and 14 under 35 U.S.C. § 103 has been overcome.

Response to 35 U.S.C. § 103 rejections of claims 5, 7, 10, 11, 16 and 18

Claims 5 and 16 were rejected as being unpatentable over Zhou in view of Cotreay. Claims 7, 10, 11, and 18 were rejected as being unpatentable over Zhou in view of Rosch.

Cotreay appears to have been cited solely for the proposition of teaching sensing either side of an in-line resistor to enable computation of a line current.

Rosch appears to have been cited for teaching tip and ring control circuits and voiceband circuitry.

Applicant respectfully submits that none of Cotreay or Rosch makes up for the deficiencies of Zhou presented above with respect to the response to the 35 U.S.C. § 102 rejections.

Thus applicant submits amended independent claims 4 and 13 are nonobvious in view of the cited references, alone or in combination. Given that claims 5, 7, 10, and 11 depend from claim 4; and claims 16 and 18 depend from claim 13; applicant submits claims 5, 7, 10, 11, 16, and 18 are likewise patentable under 35 U.S.C. § 103 in view of the cited references.

Applicant respectfully submits that the 35 U.S.C. § 103 rejection of claims 5, 7, 10, 11, 16, and 18 has been overcome.

Conclusion

In view of the amendments and arguments presented above, applicant respectfully submits the applicable rejections and objections have been overcome. Accordingly, claims 1-20, as amended, should be found to be in condition for allowance.

If there are any issues that can be resolved by telephone conference, the Examiner is respectfully requested to contact the undersigned at (512) 858-9910.

Respectfully submitted,

Date August 9, 2006

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